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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/367,778 | 08/18/1999 | PETER LIGGESMEYER | P99.0101 | 4756 |

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SCHIFF HARDIN & WAITE
PATENT DEPARTMENT
7100 SEARS TOWER
CHICAGO, IL 60606-6473

EXAMINER

TSAI, CAROL S W

ART UNIT PAPER NUMBER

2857

DATE MAILED: 05/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/367,778

Applicant(s)

LIGGESMEYER, PETER

Examiner

Carol S Tsai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

“WS” at page 9, line 15.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

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122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 2, 4, 5, and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 6,047,278 to Winkelmann.

With respect to claims 1 and 8-11, Winkelmann discloses a method for computer-supported error analysis of at least one of sensors and actuators in a technical system, the error analysis being in a form of a status finite description that exhibits statuses of the technical system, the method using a computer, comprising the steps of: a) determining a status-finite description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system (see col. 4, line 64 to col. 5, line 25); b) determining a first set of achievable statuses for the technical system and c) determining a second set of achievable statuses for the technical system having an error (see col. 5, line 63 to col. 6, line 67; d) forming a difference set from the first set and the second set and e) determining result conditions from the difference set, the result conditions meeting prescribable conditions (see col. 8, line 18 to col. 9, line 54).

As to claim 2, Winkelmann also discloses method steps a) through f) being implemented for all possible errors of sensors and actuators in the technical system (see col. 6, lines 63-67).

As to claim 4, Winkelmann also discloses method steps b) and c) ensuing according to a method of model checking (see col. 4, line 63 to col. 5, line 61).

As to claim 5, Winkelmann also discloses a status-finite description of a process implemented by the technical system (see col. 6, lines 25-67).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelmann in view of U. S. Patent No. 4,680,784 to Lehnert et al.

As noted above, Winkelmann discloses the claimed invention, except for the status-finite description being realized by a finite automat.

Lehnert et al. teach the status-finite description being realized by a finite automat (see col. 6, line 60 to col. 7, line 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Winkelmann's method to include the status-finite description being realized by a finite automat, as taught by Lehnert et al., in order to describe the subscribers behaviour with the aid of event chains (see Lehnert et al. col. 6, lines 64-65).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winkelmann in view of Lehnert et al. as applied to claims 1 and 6 above, and further in view of U. S. Patent No. 5,481,717 to Gaboury.

As noted above, Winkelmann in combination with Lehnert et al. teach all the features of the claimed invention, but do not disclose the status-finite being a form of a binary decision diagram.

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Gaboury teaches the status-finite being a form of a binary decision diagram (see col. 1, lines 50-64).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Winkelmann in combination with Lehnert et al.'s method to include the status-finite being a form of a binary decision diagram, as taught by Gaboury, in order to provide a common representation of the semantic content of the specification and the implementation, facilitating comparison (see Gaboury col. 1, lines 58-60).

Allowable Subject Matter

7. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Xie et al. disclose formal verification of a logic design through implicit enumeration of strongly connected components.

Scarrah discloses a manufacturing process improvement method operative in the presence of random process fluctuations with allowance made for intervention by operating personnel.

Iwashita et al. disclose a verification apparatus which verifies whether or not a finite state

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machine indicating the operation of a synchronous sequential machine satisfies the property indicating the functional specification repeats the image computation in the M and the computation of a set product by q starting with the state set p when the finite state machine M, the subset q of the state of the M, and the subset p of the q are given; and checks the relation of the state set of the computation process.

Kukula et al. disclose a method and system for an automata-based approach to state reachability of an interacting extended finite state machine.

Hallwirth discloses a controlling system including a comparator unit, which determines a system deviation from a reference variable and a controlled variable, and comprising a correcting device, which is arranged downstream from the comparator unit and which determines a manipulated variable of a controlled system.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol S. Tsai whose telephone number is (703) 305-0851. The examiner can normally be reached on Monday-Friday from 7:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703) 308-1677. The fax number for TC 2800 is (703) 308-7382. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2800 receptionist whose telephone number is (703) 308-1782.

In order to reduce pendency and avoid potential delays, Group 2800 is encouraging FAXing of responses to Office actions directly into the Group at (703) 308-7382. This practice

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may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2800 will be promptly forwarded to the examiner.

Carol S. Tsai

05/10/02


MARC S. HOFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800